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B0408

A morphologic and quantitative study of mechanoreceptors in the remnant stump of the human anterior cruciate ligament

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Purpose: To investigate the morphology and quantity of mechanoreceptors in the remnant stumps of injured anterior cruciate ligaments (ACLs) and the association of the number of mechanoreceptors with the time from injury to surgery.
Methods: Complete ACL stump specimens were collected from 40 volunteer patients who underwent arthroscopic ACLreconstruction surgery. Serial sections, 20 mm in thickness, were prepared from each specimen. After H&E staining and immunohistochemical labeling, the morphology, type, size, and quantity of the mechanoreceptors were observed under an optical microscope.
Results: A total of 176 Ruffini corpuscles, 61 pacinian corpuscles, 15 Golgi-like tendon organs, and 66 atypical mechanoreceptors were observed. Free nerve endings were commonly present in the specimens. The time from injury to surgery ($\log_{10}$ days) was negatively correlated with the number of total mechanoreceptors (r=0.43, P < .006), Ruffini corpuscles (r=0.45, P < .003), and the volume of the ACL stump (r=0.52, P < .01), and these correlations were independent of age, gender, injury side, and career.
Conclusions: The number of mechanoreceptors in an ACL stump and the volume of the stump decreased with the time from injury to surgery.
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B0412

Analysis of the tibial osteotomy thickness of unicompartmental knee arthroplasty

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Background: Satisfactory outcomes have already been reported for both total knee arthroplasty (TKA) and unicompartmental knee arthroplasty (UKA), however, there is still no reports talking about the tibial osteotomy thickness. Thus, the purpose of this study is to compare the tibial osteotomy thickness of UKA and TKA in patients of medial compartment osteoarthritis.
Materials & Methods: From January 2013 to June 2015, 33 patients (35knees) with medial compartment osteoarthritis were enrolled in this study. There were 14 males (15 knees) and 19 females (20 knees). The ages of patients ranged from 43~79 years (average 62.2 years). All the patients suffered from medial tenderness, weight-bearing pain, and stenosis of the medial compartment. We analyzed the X-ray preoperatively to estimate the osteotomy level, position, and thickness of the medial tibial plateau according to preoperative TKA template. Then an unicompartmental knee arthroplasty (UKA) was performed. Meanwhile, we measured the actual osteotomy level position, and thickness after UKA.
Results: X-ray film was taken after surgery, and compared with the preoperative one, and the corresponding data were recorded. According to preoperative measurement, the average expected medial tibial osteotomy thickness of TKA was 1.85mm (1mm-2.5mm), and that of UKA was 4.32mm (3.2mm-5.6mm). While, according to the postoperative measurement, the average actual medial tibial osteotomy thickness of UKA was 7.22mm (3.0mm-9.7mm). Significant difference was found among these three groups (P<0.05).
Discussions & Conclusions: There are still very large differences between TKA and UKA in the respect of tibial osteotomy thickness, which is significant in preserving medial bone mass and late revision.
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B0416

Anatomic reconstruction of anterior talofibular ligament with tibial tuberosity-patellar tendon autograft for chronic lateral ankle instability

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Background: Reconstruction of anterior talofibular ligament (ATFL) is challenging when the remaining ligamentous tissue is insufficient. Anatomic reconstruction of the ATFL with tibial tuberosity-patellar tendon graft is a good choice that can restore ankle stability, avoid the slow healing of tendon-bone interface as well as preserve joint mechanics and subtalar motion.
Hypothesis: A new technique for anatomically reconstructing the ATFL using a tibial tuberosity-patellar tendon graft will be effective for treating chronic lateral ankle instability (CLAI) induced by single ATFL insufficiency.
Methods: Twenty-one patients with CLAI were found at operation to have single ATFL injury, without healthy ligament margins suitable for suturing. The AFTL was anatomically reconstructed with tibial tuberosity-patellar tendon graft. The American Orthopaedic Foot and Ankle Society Ankle-Hindfoot Score (AHS) and Visual Analog Scale (VAS) were used together to evaluate the clinical results before and after operation. Radiographically, talar tilt angles and anterior drawer were also assessed in pre- and postoperative ankle stress views.
Results: At a mean follow-up of 38 ± 30 months (range, 24-95 months), 100% of patients were completely satisfied with the procedure. Mean AHS values significantly improved from 42.3 ± 4.9 preoperatively to 90.4 ± 6.7 at the latest follow-up. VAS pain scores significantly decreased from 7.3 ± 1.3 to 1.9 ± 1.8 at the latest follow-up. No patients developed arthritic changes beyond grade I on plain radiographs. On stress radiographs, the mean anterior displacement was 6.7 ± 1.2 mm before operation and 3.4 ± 0.6 mm at the latest follow-up. The mean talar tilt angle was 12.3° ±1.1° before the operation and 4.3° ±0.8° at the latest follow-up.
Conclusion: Anatomic reconstruction of the ATFL using tibial tuberosity-patellar tendon graft allows bone-bone healing in talus and tendon-tendon healing in fibula rather than requiring tendon-bone healing, and provides satisfactory clinical outcomes for treating CLAI.
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B0420

Arthroscopic management for hip acetabular labral tears − A retrospective study for 300 hip arthroscopy surgery cases

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Purpose: Several studies have recently found an association between acetabular labral tears and the early onset of osteoarthritis. For this reason, treatment of labral tears in young and active patients is crucial for hip preservation. We retrospective reviewed 300 cases for hip acetabular labral tears that treated with hip arthroscopy surgery. The clinical results and image evaluation results were analyzed.
Method: From Mar 2007 to May 2013, 300 consecutive cases of hip acetabular labral tears were treated with hip arthroscopy surgery, we divided there cases to 4 groups:1. Acute hip trauma. 2. Acetabular labral tears combined with Femoroacetabular impingement (FAI) 3. Acetabular labral tears combined with bonderary hip dysplasia.(CE angle 20°-25°) 4. Acetabular labral tears combined with severe hip dysplasia (CE angle <20°). All the patients were evaluated by clinical examination, X ray film, MRI. The mean follow up time was 3.6 years (2-5 years).
Results: For Acute hip trauma cases, 36 patients were included. We performed hip arthroscopic surgery that including loose body removal and debridement of the labral tears. Two of the patients were treated with internal fixation of the posterior wall fracture of acetabular rim and labral repair under arthroscopic surgery. The mean modified harris score (MOS) was improved significantly from 56.2 ± 4.8 pre-operatively to 95.6 ± 3.7 post-operatively. (P<0.01). For FAI cases, 234 patients were included. All the patients were treated with acetabular rim trimming and osteoplasty of femoral neck and head junction under arthroscopy surgery.168 patients were treated with labral repair and 66 patients were treated with labral tears debridement. The mean MOS of the labral repair group was significantly improved from 68.3 ± 3.4 pre-operatively to 97.4 ± 2.8 post-operatively. (P<0.01). The mean MOS of the labral debridement group was significantly improved from 65.3 ± 4.8 pre-operatively to and 95.4 ± 4.1. (P<0.01). There was no significant different between the two groups.(P>0.05). For acetabular labral tears combined with bonderary hip dysplasia cases (CE angle 20°-25°).25 patients were included. All the patients were treated with labral repair under arthroscopy surgery. The mean MOS was improved significantly from70.1 ± 2.8 pre-operatively to 98.3 ± 4.3 post-operatively. (P<0.01). For acetabular labral tears combined with severe hip dysplasia cases (CE angle <20°), 5 patients were included. All the patients were treated with labral repair under arthroscopy surgery. The mean MOS was not significantly improved from 65.2 ± 4.5 pre-operatively to 67.3 ± 5.1 post-operatively. One 59 years old patients complicated with hip subluxation at 6 months after operation and revised by hip arthroplasty. The postoperative results were poor (P>0.05).
Conclusion: Hip arthroscopy surgery seems to be an effective method for treating hip acetabular labral tears cases for patients not combined with severe hip dysplasia. The mid-term results showed good improvement of the clinical evaluation no matter labral repair of debridement but not for the severe hip dysplasia cases.
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B0424

Combined posterior and anterior ankle arthroscopy for treating posterior and anterior ankle impingement syndrome - A non-distraction technique with rapid switching position

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Purpose: Ankle arthroscopy is an effective technique for treating ankle impingement syndrome. Sometimes it's difficult to treat with the patients combined with the posterior and anterior